REMARKS

CLAIM STATUS

Claims 1, 2, and 5-13 are pending in the application.

SUMMARY OF OFFICE ACTION

The outstanding Office Action is a final Action that again acknowledges the claim for foreign priority and the receipt of the priority document. The outstanding Office Action further includes claim rejections under 35 U.S.C. § 103(a) that are treated in detail below.

CLAIM REJECTIONS - 35 U.S.C. § 103(a)

A. CLAIMS 1, 2, 5, 8-10, AND 12

Claims 1, 2, 5, 8-10, and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Buelow, II et al. (USP 6,554,456, hereinafter "Buelow") in view of Tsuchida (JP 11-327047, hereinafter "Tsuchida"), and further in view of Teruaki (JP 03-266824, hereinafter "Teruaki"). This rejection is respectfully traversed.

Claim 1 requires various features including a reflector that has first and second reflector portions with the:

... first reflector portion being formed with a spherical surface centered at a light generation point of the arc tube is formed on a rear side from the arc tube as a boundary, a second reflector portion, being a single reflector, formed with an ellipsoid formed in front of the boundary of the arc tube, and the outgoing light emitted from the arc tube being reflected by the first and second reflector portions so that the reflected light of the first reflector portion reaches a predetermined condensed spot outside the reflector and the light reflected of the second reflector portion directly reaches the predetermined condensed spot; and

> a converging lens, provided inside the second reflector portion, such that all of the light not reflected by the second reflector portion and passing through the converging lens are converged to the predetermined condensed spot.

Turning first to the primary reference to Buelow, this reference specifically teaches away from the use of these combined reflector portions that will together reflect light to the claimed

"predetermined condensed spot." Just as the teachings of Buelow would have led the artisan away from using the claimed reflector portions, it also would have led the artisan away from using the claimed converging lens inside the second reflector portion to further insure convergence of exit light to the "predetermined condensed spot."

In these respects, note Buelow at col. 3, lines 4-10, and the teaching that:

> The coupling device increases in cross-sectional area from inlet to outlet in such manner as to reduce the angle of light reflected from its interior surface as it passes through the device, **while transmitting it as a generally diverging light beam through the outlet**. By "generally diverging" is meant that a substantial number of light rays diverge from main axis 16, although some rays may be parallel to the axis. (Emphasis added.)

Also note Buelow at col. 3, lines 27-49, expressly teaching that:

> Traditionally, reflectors (not shown) control light from light sources in a so-called "imaging" method. Elliptical reflectors, for example, image the light source, positioned at a first focus of the reflector, onto a second focus. The controlled light converges from the surface of the reflector to the second focus as the light exits the reflector. Parabolic reflectors are another example of optics using imaging. In a parabolic reflector, the controlled light is collimated so that light rays exit in a generally parallel fashion. In contrast, the coupler of the present invention uses "non-imaging" optics, and, in preferred embodiments, realizes small size and superior light-mixing properties possible with such optics. As the light leaves a non-imaging collector (e.g., coupling device 12), most of the light is controlled so as to be generally diverging at a directionally useful angle (for example, up to 35 degrees) as it leaves the reflector. This is an important aspect of a lighting system since the light is most highly concentrated at the exit of the non-imaging collector (e.g., coupling device 12). In contrast, in an elliptical system the light is most highly concentrated at the second focus. (Emphasis added.)

Thus, Buelow clearly teaches the artisan that the coupling device 12 cannot be modified to correspond to this claimed second reflector portion because the claimed second portion must be "formed with an ellipsoid formed in front of the boundary of the arc tube" and cooperate with the first portion so that "the outgoing light emitted from the arc tube being reflected by the first and second reflector portions" will reach "a predetermined condensed spot outside the reflector." Accordingly, Buelow is a reference that would have led the artisan to take a different path "in a direction divergent from the path that was taken by the applicant," and, accordingly is a

reference that teaches away from the claimed invention. *See In re Gurley*, 27 F. 3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

In addition, a modification of coupling device 12 to help reflect light in a manner to form the claimed "predetermined condensed spot" is not only taught away from by the above noted coupler 12 teachings of Buelow, such a modification would not have been considered to have been obvious because it would render the Buelow system unsuitable for its intended purpose which is "to provide substantially all of the light to a target area 14 within a predetermined angle, for example, 35 degrees from the main axis 16." See col. 3, lines 24-26, for example. Any proposed modification that would change the basic operating principle of a reference is not an obvious one. See In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959). Moreover, reference modifications that would render a reference unsatisfactory for achieving its intended purpose have also long been held to not be obvious modifications. See In re Gordon, 733 F.2d 900, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Therefore modifying the Buelow system to include the claimed first and second reflector portions along with the claimed "converging lens, provided inside the second reflector portion, such that all of the light not reflected by the second reflector portion and passing through the converging lens are converged to the predetermined condensed spot" cannot be said to be an obvious modification of the Buelow system.

Further in this regard, the outstanding Office Action has alleged that Tsuchida discloses a first reflector portion (4) and a second reflector portion (1), and that outgoing light emitted from the arc tube is reflected by the first and second reflector portions so that the reflected light reaches a predetermined condensed spot outside the reflector. Even assuming that the Examiner's interpretation of the teachings of Tsuchida is correct, the above noted case law establishes that the artisan would not have been **reasonably** led to replace the reflector 15 and coupler 12 of Buelow (that use "non-imaging" optics to cause "most of the light" leaving the reflectors to be "generally diverging at a directionally useful angle (for example, up to 35 degrees)) with reflector portions that are designed to cause the light output to converge to the claimed exterior predetermined condensed spot because such a modification is taught away from by Buelow and, if made, would change the basic operating principle of Buelow as well as render Buelow unsatisfactory for achieving its intended purpose.

In addition, the Supreme Court recently noted that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir 2006)). No such "rational underpinning" has been presented as to why the Artisan would want to destroy the basic operating principle of Buelow by modifying it to include the Tsuchida disclosed first reflector portion (4) and second reflector portion (1) .

In view of the above, it is respectfully submitted that the artisan would have had no reasonable basis to try to change the basic operating principle of Buelow so as to render Buelow unsatisfactory for achieving its intended purpose by replacing the intentionally diverging angle inducing reflective coupler 12 and reflector 15 by the Tsuchida taught first reflector portion (4) and a second reflector portion (1).

Also, the assertion that Teruaki teaches the claimed "converging lens, provided inside the second reflector portion, such that all of the light not reflected by the second reflector portion and passing through the converging lens are converged to the predetermined condensed spot" is not correct as lens 12 is not taught for use apart from lenses 11 and 13 that together cooperate to convert converging light to collimated light[1] as parts of conversion part 14. Thus, not only would the artisan again have had no reasonable basis to try to change the basic operating principle of Buelow using just lens 12 from Teruaki, the "rational underpinnings" as to somehow modifying Buelow to further include just the relied upon Teruaki disclosure of condensing lens 12 taken out of the Teruaki taught context as to being used with the other lenses 13 and 11 is also missing. Such a piecemeal reconstruction further violates *In re Wesslau,* 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965).

Furthermore, even assuming that the above noted irrational proposed modifications to change the basic operating principle of Buelow so as to render Buelow unsatisfactory for

[1] Note the solid lines shown projecting from 13 to 15 in drawings 1-6, for example. The dotted lines through lens 13 represent the converging light from mirrors 9 and 10 that are converted to the solid lines of collimated light by conversion part 14 that is made up of the lenses 11-13. See the directive in MPEP § 706.02 II as to proper reliance being limited to reliance on a translation of the underlying document and not just the abstract and the need for the PTO to provide a translation to complete the record.

achieving its intended purpose were nevertheless made, the claim 1 invention as a whole would still not be taught.

In this last regard, claim 1 requires:

> ... the reflector being formed of a metal substrate and being constructed so that a light source fitting space for holding the sealed portions of the arc tube in a manner that allows heat from the arc tube to be conducted to the reflector is formed.

Page 3, lines 5-7, of the outstanding Action allege that Buelow teaches the claimed "reflector being formed of a metal substrate" because of the mere mention at col. 1, line 48, as to unrelated "PAR30 lamps." This allegation is based on the unsubstantiated assertion that "PAR" means "parabolic aluminum reflector." It is respectfully submitted that such an assertion of a fact required for a determination of patentability with no supporting prior art evidence is clearly improper. *See In re Zurko*, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697-98 (Fed. Cir. 2001).

Secondly, even if the Administrative Procedure Act (The PTO is governed by the Administrative Procedure Act *See In re Lee*, 277 F.3d 1338, 1342, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) required showing of "substantial evidence" as to this mere assertion had been provided to demonstrate that "PAR" means "parabolic aluminum reflector," this would not be subject matter that is relevant to the relied upon Fig. 1 lamp 11 of Buelow that is disclosed at col. 2, lines 50-51, to be "a metal halide lamp as shown."

While the possible use of "a filament-type halogen lamp, or an electrodeless lamp" are also mentioned at col. 2, lines 51-52, PAR lamp alternatives are not mentioned. Also a "filament-type halogen lamp," an "electrodeless lamp," and PAR lamps are not disclosed by Buelow to have the Fig. 1 illustrated structure of the illustrated "metal halide lamp" as to the Fig. 1 upper and lower electrodes that are relied on by the outstanding Action to teach the requirement of independent claim 1 as to "an arc tube having a pair of main electrodes arranged on one electrode axis." Accordingly, merely because Buelow mentions "PAR30 lamps," this mere mention includes no reasonable teaching that the reflector portions 12 and 15 of the metal halide lamp 11 of Fig. 1 are both to be formed as the claimed first and second reflective aluminum substrate portions that the outstanding Action appears to allege to exist in such "PAR30 lamps." *See In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) as follows:

> ... a rejection cannot be predicated on the mere identification in [the single reference cited to support the rejection] of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.

Moreover, it is not clear from the showing of Fig. 1, or the description of Fig. 1 in cols. 2-3 of Buelow, how the illustrated reflector 15 is associated with bulbous region 11a. Page 3 (at lines 10-11) of the outstanding Action asserts that the Fig. 1 illustrated "bulbous portion 11a is surrounded by reflector 15, such that heat may be conducted to the reflector." The illustrated reflector 15 is noted at col. 2, lines 52-53, to be "shown cross-hatched." The cross-hatched region of the bulbous portion 11a is only shown as associated in some undefined manner with the back half of the outer surface of that bulbous portion 11a, not surrounding all of the outer surface of 11a. In addition, claim 1 requires that both the first and second portions that form the metal substrate reflector must further be "constructed so that a light source fitting space for holding the sealed portions of the arc tube in a manner that allows heat from the arc tube to be conducted to the reflector." There is no showing or description of the reflector portion 15 of Buelow that even remotely suggests that this part of the overall reflector (12 and 15) has anything to do with a metal substrate portion like this claim 1 metal substrate portion that must help form a "light source fitting space for holding the sealed portions of the arc tube." The Examiner cannot simply assume that this apparent coating layer 15 that is somehow associated with part of the bulbous portion 11a of Buelow cooperates with 12 to form the claimed "light source fitting space for holding the sealed portions of the arc tube." *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967) ("The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not ... resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis."). In addition, the association between reflector 15 and bulbous portion 11a is at best based upon ambiguous disclosures that cannot be considered to be the clear reference disclosure required by *In re Hughes*, 345 F.2d 184, 188, 145 USPQ 467, 471 (CCPA 1965) and *In re Moreton*, 288 F.2d 708, 711, 129 USPQ 227, 230 (CCPA 1961).

Thus, the rejection of independent claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Buelow in view of Tsuchida and further in view of Teruaki fails to establish the required showing as to a valid *prima facie* case of unpatentability and should be withdrawn.

Claims 2, 5, 8-10, and 12 are all ultimately dependent on independent claim 1. Accordingly, the rejection of claims 2, 5, 8-10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Buelow in view of Tsuchida and further in view of Teruaki should further be withdrawn for all the reasons noted above.

B. CLAIMS 6 AND 7

Claims 6 and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Roberts et al. (USP 6,200,005, hereinafter "Roberts"). This rejection is respectfully traversed.

Claims 6 and 7 are variously dependent on claim 1. As Roberts does not cure the above-noted deficiencies of Buelow in view of Tsuchida and Teruaki as to the rejection of independent claim 1, these dependent claims are respectfully submitted to be improperly rejected under 35 U.S.C. § 103(a) as unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Roberts for at least the same reason as noted above as to parent independent claim 1.

Accordingly, the withdrawal of the improper rejection of dependent claims 6 and 7 under 35 U.S.C. § 103(a) as unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Roberts is also respectfully requested.

C. CLAIM 11

Claim 11 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Lapatovich (USP 6,566,817) and Ishino et al. (USP 7,234,845, hereinafter "Ishino"). This rejection is respectfully traversed.

Claim 11 is indirectly dependent on independent claim 1. As Lapatovich and Ishino do not cure the above-noted deficiencies of Buelow in view of Tsuchida and Teruaki as to the rejection of independent claim 1, this dependent claim is respectfully submitted to be improperly rejected under 35 U.S.C. § 103(a) as unpatentable over Buelow in view of Tsuchida and Teruaki

and further in view of Lapatovich and Ishino for at least the same reason as noted above as to parent independent claim 1.

Accordingly, the withdrawal of the improper rejection of dependent claim 11 under 35 U.S.C. § 103(a) as unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Lapatovich and Ishino is also respectfully requested.

D. CLAIM 13

Claim 13 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Wedell (USP 5,535,111). This rejection is respectfully traversed.

Claim 13 is dependent on independent claim 1. As Wedell does not cure the above-noted deficiencies of Buelow in view of Tsuchida and Teruaki as to the rejection of independent claim 1, this dependent claim is respectfully submitted to be improperly rejected under 35 U.S.C. § 103(a) as unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Wedell for at least the same reason as noted above as to parent independent claim 1.

Accordingly, the withdrawal of the improper rejection of dependent claim 11 under 35 U.S.C. § 103(a) as unpatentable over Buelow in view of Tsuchida and Teruaki and further in view of Wedell is also respectfully requested.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond F. Cardillo, Jr. Reg. No. 40,440 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By _____

Michael R. Cammarata
Registration No.: 39,491
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicants